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Quality Engineering Test Report

SERIES: SD-50C **50W DC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY**

SAMPLE: **A. SD-50C-5 5V / 10A**
B. SD-50C-12 12V / 4.2A
C. SD-50C-24 24V / 2.1A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	DC INPUT VOLTAGE RANGE	I/P : TESTING SPEC : 36~72VDC O/P : FULL LOAD	A:27.9~72VDC	P
2	LINE REGULATION	I/P : 36~72VDC SPEC : A:±0.5% O/P : FULL LOAD B:±0.3% C:±0.2%	A:-0%~+0% B:-0%~+0% C:-0%~+0%	P
3	LOAD REGULATION	I/P : 48VDC SPEC : A:±0.5% O/P : MIN. TO FULL LOAD B:±0.3% C:±0.2%	A:-0.12%~+0.24% B: -0%~+0.05% C:-0.02%~+0.02%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P : 36~72VDC SPEC : A:±2% O/P : MIN. TO FULL LOAD B:±1% C:±1%	A:-0.12%~+0.24% B: -0%~+0.1% C:-0.02%~+0.02%	P
5	RIPPLE&NOISE	I/P : 48VDC SPEC : A:100mVp-p O/P : FULL LOAD B:120mVp-p C:150mVp-p	A:12mV B: 3mV C: 8mV	P
6	DC INPUT CURRENT	I/P : 48VDC SPEC : 1.5A O/P : FULL LOAD	A:1.268A	P
7	MAX. INRUSH CURRENT	I/P : 48VDC SPEC : NONE O/P : FULL LOAD	A:54.3A	P
8	O/P VOLTAGE ADJ. RANGE	I/P : 48VDC SPEC : A:4.5~5.5V O/P : MIN. LOAD B:11~16V C:23~30V	A:4.40~6.21V B:9.62~16.34V C:19.6~33.40V	P
9	SET UP TIME	I/P : 48VDC SPEC : 2.5S O/P : FULL LOAD	A:2211.4mS	P
10	EFFICIENCY	I/P : 48VDC SPEC : A:76% O/P : FULL LOAD B:78% C:83%	A:81.07% B:83.1% C:86.19%	P
11	OVER LOAD PROTECTION	I/P : 48VDC SPEC : 105%~150% O/P : TESTING	A:130% B:133.5% C:138.5%	P
12	OVER VOLTAGE PROTECTION	I/P : 48VDC SPEC : A:5.75V~6.75V O/P : TESTING B:16.8V~20V C:31.5V~37.5V	A:6.22V B:17.98V C:35.40V	P
13	INSULATION RESISTANCE	SPEC : I/P-O/P 500VDC/100M Ohms MIN. I/P-FG 500VDC/100M Ohms MIN. O/P-FG 500VDC/100M Ohms MIN.	A: I/P-O/P : >100M Ohms I/P-FG : >100M Ohms O/P-FG : >100M Ohms	P
14	DIELECTRIC / WITHSTAND VOLTAGE	SPEC : I/P- O/P : 1500VAC/ 1 min (10mA CUT-OFF) I/P- FG : 1500VAC/ 1 min (10mA CUT-OFF) O/P- FG : 500VAC/ 1 min (10mA CUT-OFF)	A: I/P-O/P : <2.1mA I/P-FG : <2.32mA O/P-FG : <2.38mA	P

15	BURN-IN TEST	I/P : 48VDC O/P:FULL LOAD TA : 23.9 °C BURN-IN DURATION : 3 hrs	NON BREAK	P
16	ENVIRONMENT TEST (SAMPLE A:)	HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P : 48VDC O/P : FULL LOAD AMBIENT TEMPERATURE : 53.4 °C	AFTER 13 hrs NON BREAK	P

NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>17</td><td>TEMPERATURE RISE TEST T rise OF PARTS</td><td>A: I/P : 48VDC AFTER 2 hr BURN-IN
O/P : FULL LOAD TA : 23.9°C
<table><tr><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr><tr><td>Q1</td><td>MAIN TRANSISTOR</td><td>49.3°C</td><td>25.4°C</td></tr><tr><td>T1</td><td>MAIN TRANSFORMER</td><td>66.3°C</td><td>42.4°C</td></tr><tr><td>D11</td><td>O/P DIODE</td><td>62.1°C</td><td>38.2°C</td></tr><tr><td>C34</td><td>O/P FILTER CAPACITOR</td><td>51.4°C</td><td>27.5°C</td></tr><tr><td>L1</td><td>O/P CHOCK</td><td>63.8°C</td><td>39.9°C</td></tr><tr><td>C5</td><td>I/P FILTER CAPACITOR</td><td>43.4°C</td><td>19.5°C</td></tr></table></td><td></td><td>P</td></tr>
<tr><td>18</td><td>LIFE CYCLE</td><td colspan="2">A: SUPPOSE C34 IS THE MOST CRITICAL COMPONENT
I/P : 48VDC O/P : FULL LOAD Ta : 25°C Tc34 : 52.5°C Life: 45737 hrs
I/P : 48VDC O/P : FULL LOAD Ta : 53.4°C Tc34 : 74.1°C Life: 10234 hrs</td><td>P</td></tr>
<tr><td>19</td><td>CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="3">A: FUSE : 3A/250V
INPUT DIODE : 1N5401
LINE FILTER : LS TF-096C EE-25
TRANSFOMER : TF-327 EER-28
POWER SWITCHER : K891
OUTPUT DIODE : D83-004
OUTPUT CAPACITOR : 2200uF/16V(v) 105°C HL
INPUT CAPACITOR : 220uF/100V(v) 105°C HL
P.C.B : SD-50 FR-4 2 OZ DS</td></tr>
<tr><th>DATE</th><th>SAMPLE</th><th>TEST RESULT</th><th>TEST</th><th>APPROVAL</th></tr>
<tr><td>980421</td><td>SD-50C</td><td>PASS</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
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